

CoreTile Express for Cortex-A15 and Cortex-A7

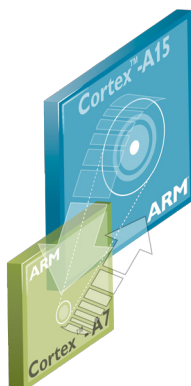
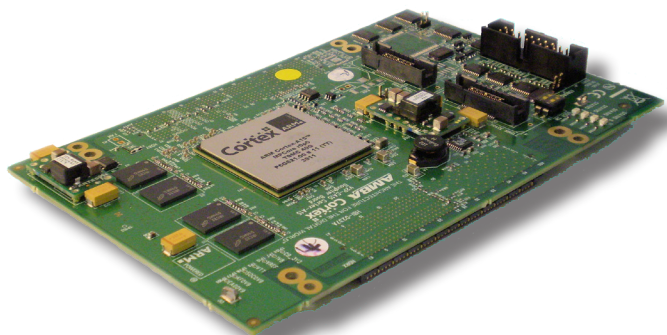
For the Versatile Express Family

ARM[®]

The Versatile™ Express family development boards provide an excellent environment for prototyping the next generation system-on-chip designs. Through a range of plug-in options, hardware and software applications can be developed and debugged.

The CoreTile Express for the ARM® Cortex™-A15 MPCore™ and Cortex-A7 processors is a test chip-based development platform which implements a complete SoC design around these processors. This chip is the first commercially available silicon that demonstrates the power-saving capabilities of ARM big.LITTLE™ processing. It enables:

- Exploration of the big.LITTLE architecture
- Boot code, hypervisor, cluster-switching, device driver and application software development
- Software debug and development of software tools through the on-chip CoreSight™ debug and trace infrastructure.



CoreTile Express A15x2 and Cortex-A7x3

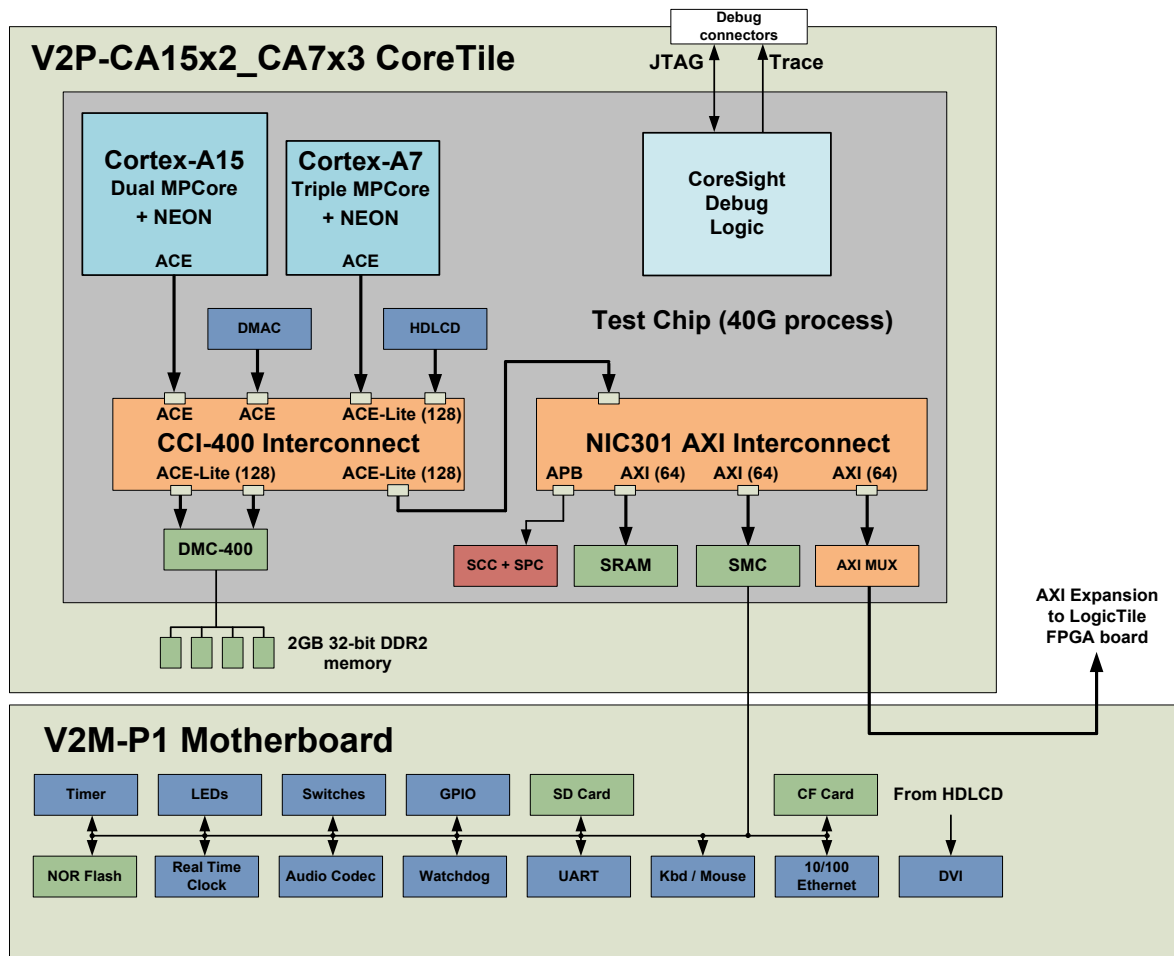
Features

- Processor Subsystem
 - Dual Cluster, big.LITTLE configuration
 - 2 x ARM Cortex-A15 with VFP and NEON,™ r2p1
 - 1GHz operating speed
 - Caches: L1 32 KB, L2 1MB
 - 3 x ARM Cortex-A7 with VFP and NEON, r0p1
 - 800MHz operating speed
 - Caches: L1 32KB, L2 512KB
 - CoreSight ETM/PTM per core + 16KB ETB
 - DVFS control via System Configuration Controller
- AMBA® AXI™ Subsystem
 - Internal CCI-400, 128-bit, 500MHz, r0p2
 - Internal NIC301, 64-bit, 500MHz
 - External AMBA AXI: Master port 64-bit, 50MHz
 - DDR2 interface: DMC-400, 400MHz, r0p0
 - 2GB OF 32-bit DDR2 memory
 - DMAC: PL330, 128-bit
 - Static Memory Bus Interface: PL354
 - 32-bit 50MHz to motherboard
 - Boot from motherboard NOR Flash
 - HDCLD video controller: 1920 x 1080p, 60Hz
- Expansion support
 - AMBA AXI Master link to expansion FPGA daughterboard
- Debug
 - ARM JTAG: 20-way DIL box header
 - ARM 32-bit parallel trace: dual 38-pin Micors
- Simplified configuration via motherboard
 - System appears as a USB flash drive on a PC
 - Fast programming and configuration
 - Configuration text files for system settings
 - Remote power control via RS232

Deliverables

- V2P-CA15x2 CA7x3 daughterboard
- Versatile Express support DVD
- Example AMBA AXI subsystem design
 - Additional LogicTile required
- SelfTest software
- Linux BSP

CoreTile Express for Cortex-A15 and Cortex-A7 Architecture



CoreTile Express A15x2 and A7x3 architecture diagram

When connected to a Versatile Express motherboard the CoreTile Express forms the basis of an early access software development platform. Developers can use the system for porting OS kernel or driver code to the big.LITTLE architecture, based on the Cortex-A15 and Cortex-A7 processors.

The system can be expanded by adding a LogicTile Express board to the second tile site on the motherboard. This adds a large FPGA for prototyping custom logic blocks along side the ARM processor. The exported AMBA AXI interface from the CoreTile has dedicated routing, directly linking the Test Chip and FPGA. This ensures maximum bandwidth is available for the user AMBA AXI system.

A microcontroller-based configuration mechanism provides an easy, USB-based plug-and-play method for programming software, firmware and FPGA images into the system flash memory from an attached PC.

AVAILABILITY: END Q3 2012

PART NUMBER: V2P-CA15-0314A

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